

DEPARTMENT OF DEFENSE APPROPRIATIONS FOR FISCAL YEAR 2015

WEDNESDAY, JUNE 11, 2014

U.S. SENATE,
SUBCOMMITTEE OF THE COMMITTEE ON APPROPRIATIONS,
Washington, DC.

The subcommittee met at 10:15 a.m., in room SD-192, Dirksen Senate Office Building, Hon. Richard J. Durbin (chairman) presiding.

Present: Senators Durbin, Reed, Shelby, and Murkowski.

DEPARTMENT OF DEFENSE

MISSILE DEFENSE AGENCY

STATEMENT OF VICE ADMIRAL JAMES D. SYRING, DIRECTOR, UNITED STATES NAVY

OPENING STATEMENT OF SENATOR RICHARD J. DURBIN

Senator DURBIN. The subcommittee meets this morning to receive testimony in the fiscal 2015 budget request for the Missile Defense Agency.

I'm pleased to welcome the Director of the Missile Defense Agency (MDA), Vice Admiral James Syring. Thank you for appearing before the committee today.

For fiscal year 2015, the President's budget requests \$7.5 billion for the Missile Defense Agency, and you're planning on receiving \$30.1 billion from fiscal year 2016 through 2019.

As we all know, the Department's budget plan for fiscal years 2016 through 2019 exceeds the spending caps put in place by the Budget Control Act by over \$115 billion. I hope to hear from you today on how you would meet sequestration levels in future years and what this would mean for MDA's ability to perform its mission of keeping America safe.

We've discussed in the past the threats the United States faces around the world in the area of missile proliferation and programs in Iran and North Korea, to name a few. As we attempt to address these problems with a prudent combination of political, economic and military tools, we rely heavily on MDA's capabilities for regional and homeland defense.

Given the threats we face, it's important to get missile defense right. This budget request includes a number of proposals to mitigate problems with our fielded systems; most notably the Ground-Based Interceptor (GBI). These are design, engineering and reli-

ability problems that were largely caused by the rush to field this system without proper testing. We are now paying dearly for some of those decisions.

As we move forward with new major acquisition programs, we need to ensure that we don't let arbitrary schedules trump sound, fiscally responsible acquisition practices. "Fly before you buy" makes a lot of sense to me. We simply can't afford to divert resources from critical new investments in science and technology or proven successful production programs to pay for things that should have been done right in the first place.

One example, I'm concerned by the proposal to reduce procurement quantities of the Standard Missile interceptor. This missile works, it's in high demand by our Combatant Commanders around the world, and it's a critical element of regional missile defense in Europe, which the administration and this committee are committed to. Yet, your budget request reduces production by over 40 percent.

PREPARED STATEMENT

We look forward to hearing your thoughts on these issues. We want to ensure that our fiscal year 2015 appropriation bill enables the Missile Defense Agency to defend and support our Nation and interests around the world in a successful, fiscally responsible manner.

[The statement follows:]

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Given the threats we face, it is important that we get missile defense right. This budget request includes a number of proposals to mitigate problems with our fielded systems, most notably the Ground Based Interceptor. These are design, engineering and reliability problems that were largely caused by the rush to field this system without properly testing it first. We are now paying dearly for that decision.

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To give you one example, I am concerned by your proposal to reduce procurement quantities of the Standard Missile interceptor. This missile works, it is in high demand by our Combatant Commanders around the world, and it is a critical element of regional missile defense in Europe, which the administration and this committee are committed to. And yet your budget request reduces production by over 40 percent.

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Thank you for your testimony this morning. Your full statement will be included in the record.

Senator DURBIN. I will have your testimony after acknowledging the presence of the Ranking Member of the full committee, Senator Richard Shelby.

STATEMENT OF SENATOR RICHARD C. SHELBY

Senator SHELBY. Thank you.

Admiral, welcome. I had a nice talk with you yesterday. Thanks for giving me that opportunity.

I join in welcoming you here today, along with Senator Durbin. I'm very appreciative of the important work that the Missile Defense Agency performs. It's a tremendous asset to our nation.

I believe, and I think this committee will agree, that the Missile Defense Agency's work to invest in game changing technology programs is essential to defending the United States, our deployed troops, allies, and friends against adversary ballistic missiles.

As you stated in your testimony, Admiral Syring, funding for MDA is essential to works, and these are your words, "work with the warfighter to develop, test and field a network global ballistic missile defense that is flexible, survivable and affordable."

I look forward to working with you and this committee and the Chairman to ensure that we provide adequate funding so that our Nation is equipped to counter present and future ballistic missile defense.

I agree with a lot of people; we live in a troubled and an unsettled world whether we realize it or not.

Thank you.

Senator DURBIN. Thanks, Senator Shelby.

Admiral, please proceed.

SUMMARY STATEMENT OF VICE ADMIRAL JAMES D. SYRING

Admiral SYRING. I want to thank you, Chairman Durbin and distinguished members of the subcommittee for the opportunity to testify today.

Out of our total request of \$7.46 billion for the fiscal year 2015 missile defense program, we are requesting approximately \$1.3 billion for homeland defense as we prepare to expand our GBI fleet to 44 by 2017. My highest priority remains a successful intercept flight test of the CE-II Exoatmospheric Kill Vehicle (EKV).

In January 2013, we conducted a highly successful non-intercept flight test and confirmed we are on the right path to return GMD (Ground-based Midcourse Defense) to sustain flight testing.

I am confident we have fixed the problem we encountered in the December 2010 test and I look forward to conducting the intercept test FTG-06b later this month. I'm also optimistic we've identified the root cause, sir, of the intercept failure involving our first generation EKV last July when the CE-I Kill Vehicle failed to separate from the booster's third stage. We've accounted for this issue

in the upcoming flight test and we are working towards a correction to the entire fleet before the end of the year.

Instead of continuing to make year-to-year reliability improvements in our GBIs, in fiscal year 2015 we are requesting to begin the redesign and improvement of the GBI EKV. The new EKV's will be more producible, testable, reliable and cost effective and eventually replace the Kill Vehicle used in our current GBI inventory.

We also begin development of a long ranged discrimination radar with deployment plan in 2010. The new midcourse tracking radar will provide persisting coverage and improved discrimination capabilities against threats to the homeland from the specific theatre.

We will continue to improve the performance of the Aegis weapons system and are requesting to procure 30 Standard Missile Block 1B guided missiles in fiscal year 2015. We will request 4 year multiyear procurement authority for the 1B starting in fiscal year 2016.

In addition, in fiscal year 2015 we will procure 31 interceptors for the THAAD (Terminal High-Altitude Area Defense) system and fund additional AN/TPY-2 radar spares and an additional THAAD battery for the Army.

PREPARED STATEMENT

I want to be very clear. We remain on schedule to meet the presidential mandate for the deployments of Phase 2 and 3 of the European Phase Adaptive Approach. I was just in Romania last week.

With 15 flight tests planned in fiscal year 2015, we will continue to test elements of the system, sir, to demonstrate that they work before we commit to fielding.

Thank you, Mr. Chairman. I look forward to the committee's questions.

[The statement follows:]

PREPARED STATEMENT OF VICE ADMIRAL JAMES D. SYRING

Good morning, Chairman Durbin, Vice Chairman Cochran, distinguished members of the subcommittee. I appreciate this opportunity to testify before you today. Our current budget request of \$7.459 billion for fiscal year 2015 will continue the development of defenses for our Nation, deployed forces, allies, and international partners against increasingly capable ballistic missiles. The fiscal year 2015 missile defense program will support the warfighter and needs of the Combatant Commanders (COCOMs) with the development and deployment of interceptors, sensors, and the command, control, battle management and communications (C2BMC) system that make up the integrated Ballistic Missile Defense System (BMDS). Our President's 2015 budget request supports needed improvements in homeland defense and continues strong support of regional defense initiatives. Our fiscal year 2015 program plans include continued investments in advanced technologies and future capabilities to keep pace with the increasingly complex threat.

BALLISTIC MISSILE THREAT

The threat continues to grow as our potential adversaries are acquiring a greater number of ballistic missiles, increasing their range and making them more complex, survivable, reliable, and accurate. The missile defense mission is becoming more challenging as potential adversaries incorporate BMD countermeasures. Space-launch activities in Iran and North Korea involve multistage systems that serve to further the development of ballistic missile technology for longer-range systems, including intercontinental ballistic missile (ICBM)-applicable technologies and systems. As the Director for National Intelligence testified last year, "Iran has demonstrated an ability to launch small satellites, and we grow increasingly concerned that these technical steps . . . provide Tehran with the means and motivation to develop larger space-launch vehicles and longer-range missiles, including an ICBM."

Iran could develop and test an ICBM capable of reaching the United States by 2015. In addition to the Taepo Dong 2 space launch vehicle/ICBM, North Korea is developing and has paraded the KN08 road-mobile ICBM and an intermediate-range ballistic missile (IRBM) capable of reaching Guam and the Aleutian Islands. Iran also has steadily increased its ballistic missile force, deploying next generation short- and medium-range ballistic missiles (SRBMs and MRBMs) with increasing accuracy and new submunition payloads. Iran has publicly demonstrated the ability to launch simultaneous salvos of multiple rockets and missiles. Demonstrating that it is capable of modifying currently deployed ballistic missile systems, Iran has flight-tested a Fateh-110 ballistic missile called the Khalij Fars by adding a seeker to improve the missile's accuracy against sea-based targets. This ballistic missile has a range of 300 km, which means it is capable of threatening maritime activity throughout the Persian Gulf and Strait of Hormuz.

SUPPORT FOR THE WARFIGHTER

Our overriding goal is to provide support to the warfighter. With this budget we will maintain our commitment to build out homeland defenses to 44 Ground Based Interceptors (GBIs), pending a successful return to intercept this summer, and focus on Ground-based Midcourse Defense (GMD) system reliability and GBI performance. We will also maintain our commitment to deploy Phases 2 and 3 of the European Phased Adaptive Approach (EPAA). We are continuing efforts to improve the performance of the Aegis Weapons System and deliver Standard Missile (SM-3) Block IB guided missiles. We will also deploy a second forward-based X-band AN/TPY-2 radar in Japan, improving homeland and regional defense capabilities and increasing our global operational AN/TPY-2 radar posture, and build and improve the C2BMC infrastructure at fielded sites. We plan to procure interceptors for Terminal High Altitude Area Defense (THAAD) and, pursuant to our agreement with the Army, fund additional AN/TPY-2 spares and an additional THAAD Battery.

Last year we conducted or participated in over 17 multi-event exercises and wargames, which are critically important to the warfighter and the intensive engineering efforts across the Agency. MDA also worked collaboratively with Combatant Commanders, Office of the Secretary of Defense (OSD) and the Services to complete a strategy and roadmap providing a series of near-, mid-, and far-term architecture options for the BMDS that are the basis for program planning for the rest of this decade. In response to the continued fielding by U.S. adversaries of air, missile, and rocket capabilities, in May 2013 MDA assumed the responsibility of Technical Authority for Integrated Air and Missile Defense (IAMD), and as such will lead the Department's joint IAMD engineering and integration efforts, including interface definition and control as well as technical requirements allocation.

Finally, we continue to work closely with the Director, Operational Test & Evaluation (DOT&E) and with independent testers and the Services. From October 2012 to the present, we have executed 10 high profile flight tests, 14 if you include our involvement with and contributions to Israeli flight tests. The highlight was Flight Test Operational-01 (FTO-01), the historic and unparalleled operational test of our regional layered ballistic missile defenses this past September, which involved THAAD and Aegis BMD, ground- and sea-based forward deployed sensors, and C2BMC. The two targets were launched on operationally realistic trajectories towards a defended area near the Reagan Test Site in the Pacific Ocean. This was a highly successful operational test involving MDA, the Operational Test Agency, Joint Functional Component Command for Integrated Missile Defense, and U.S. Pacific Command, as well as U.S. Army Soldiers from the Alpha Battery, 2nd Air Defense Artillery THAAD, U.S. Navy Sailors aboard the USS *Decatur* and British sailors aboard the HMS *Daring*, and Airmen from the 613th Air and Operations Center. Similar to the Flight Test Integrated-01 test conducted in October 2012, FTO-01 provided the warfighters confidence in the execution of their integrated air and missile defense plans and the opportunity to refine operational doctrine and tactics, techniques and procedures.

In fiscal year 2015 we have 15 flight tests in the Integrated Master Test Plan. As the BMDS matures, we are continuing to increase the complexity in our flight test program by: conducting more system-level operational tests; increasing the number of BMDS assets in those tests; increasing the numbers, types and ranges of the threat representative targets we use; conducting more simultaneous launches; and replicating potential wartime scenarios to realistically exercise warfighting chain of command to evaluate command and control concepts of operation and tactics, techniques and procedures. We also have system-level ground tests that combine the warfighter chain of command with the developmental system and test under varying conditions to improve confidence in the system being deployed to

Combatant Commands. We are entering a period of unprecedented complexity and increased testing tempo based on that complexity. Our flight tests will also involve an increasingly stressful set of threat representative targets as well as longer range interceptors for our regional capabilities. Over the coming years, U.S. Government stakeholders—to include Soldiers, Sailors, Marines, and Airmen—and allies will have a larger role and impact in our test program than ever before.

HOMELAND DEFENSE

MDA's highest near-term priority remains the successful GMD intercept flight test of the newest GBI Exoatmospheric Kill Vehicle (EKV)—the Capability Enhancement (CE)—II EKV. Based on our analysis of the data from the successful January 2013 non-intercept controlled flight test of the CE—II GBI (CTV—01), we plan to conduct FTG—06b, an intercept flight test, this summer. CTV—01 demonstrated the successful dampening of the vibration environments that affected the navigation system and resulted in the failure of the FTG—06a mission conducted in December 2010. FTG—06b will demonstrate the ability of the CE—II EKV to discriminate and intercept a lethal object from a representative ICBM target scene. An increase in the number of GBIs in the fleet assumes a successful return to intercept of the CE—II EKV.

Last July, with FTG—07, we conducted an intercept flight test of the upgraded CE—I, or first generation, EKV. We made numerous improvements to the CE—I fleet through upgrades since the last successful CE—I flight test in 2008. In FTG—07 the EKV did not intercept the target because the kill vehicle on the GBI did not separate from the booster's third stage. The failure investigation is progressing toward a root cause. Once the investigation is concluded, we will take steps to make any fixes to the fleet that need to be made for both the CE—I and CE—II EKVs.

Today, 30 operational GBIs protect the United States against a limited ICBM attack from current regional threats, such as North Korea and Iran. Last year we began refurbishment of Missile Field 1 at Fort Greely, Alaska (FGA) to develop silo capacity to support delivery of an additional 14 GBIs, continued emplacing GBIs in Missile Field 2 (MF 2), and continued conducting GBI component testing and refurbishing currently deployed GBIs to test and improve their reliability. We are requesting approximately \$1.3 billion in fiscal year 2015 for homeland defenses. We remain committed to a “fly before you buy” acquisition approach. Pending a successful outcome of the GMD intercept flight test this summer, we will resume taking delivery of GBIs and emplace them in MF 2 and MF 1 as we progress towards 44 by the end of fiscal year 2017. Beginning in fiscal year 2016, we will acquire replacement GBIs to support GMD operations, testing, and spares, pending the outcome of flight testing.

Construction of the GBI In-Flight Interceptor Communication System (IFICS) Data Terminal (IDT) at Fort Drum, New York is proceeding on schedule. Once it is operational in late-2015, the east coast IDT will enable communication with GBIs launched from Fort Greely, Alaska and Vandenberg Air Force Base in California over longer distances and improve defenses for the eastern United States by increasing system performance in specific engagement scenarios.

We currently operate a forward-based X-band radar, the AN/TPY—2 radar, in Shariki, Japan, which is in the northern part of that country. In September 2012 the Secretary of Defense directed the deployment of a second AN/TPY—2 X-band radar in Japan to provide improved tracking coverage for launches out of North Korea. Working with our Japanese partners, we expect to complete the deployment of the second AN/TPY—2 radar in Kyogamisaki in southern Japan by the end of this calendar year. We will also deploy a new C2BMC capability which will enhance the overall performance of the radars when operating in a mutually supporting dual radar mode.

We will take additional steps to keep pace with the threats to the U.S. homeland. We have requested \$99.5 million in fiscal year 2015 to redesign and improve the GBI EKV. The redesigned EKV will be built with a modular, open architecture and designed with common interfaces and standards, making upgrades easier and broadening our vendor and supplier base. The new EKVs will improve reliability and be more producible, testable, reliable, and cost-effective and eventually will replace the kill vehicle on our current GBI fleet. We are currently assessing concepts, acquisition options, and timelines to test and field the redesigned EKV. Our goal is to begin flight testing the redesigned EKV in fiscal year 2018. We also request \$79.5 million, which includes \$29 million in MILCON funding for planning and design, to begin development of a Long Range Discrimination Radar (LRDR), with deployment planned in 2020. The new long-range, mid-course tracking radar will provide persistent coverage and improve discrimination capabilities against threats to the

homeland from the Pacific theater. This new radar also will give more geographic flexibility to deploy the Sea-Based X-band (SBX) radar for contingency and test use.

MDA requests \$122 million in fiscal year 2015 to support the Discrimination Improvements for Homeland Defense (DIHD) efforts. The goal of this effort is to develop and field an integrated set of capabilities to improve BMDS reliability, lethality, and discrimination. The end result will be a deployed future BMDS architecture more capable of discriminating and destroying a reentry vehicle. Our plans in this area will support a near-term DIHD capability (2016) and a DIHD capability fielding in 2020.

We are requesting \$64 million in fiscal year 2015 for continued Sea-Based X-band (SBX) radar operations. In collaboration with the Services, Joint Staff, STRATCOM and the COCOMs, we maintained the SBX radar in Limited Test Support Status, where the radar continues to support the BMDS test program and remains available for contingency deployment under the operational command of PACOM. In 2013 SBX supported real world operations, with 49 days at-sea, and the FTG-07 GMD test with a total of 110 days at-sea and demonstrated an autonomous acquisition capability.

We are also examining locations for a possible additional CONUS interceptor site. The current GBI sites at Fort Greely, Alaska and Vandenberg AFB, California provide capability necessary to protect the homeland. While there has been no decision by the Department to move forward with an additional CONUS interceptor site, such a site would add battle space and interceptor capacity should it be deemed necessary to proceed with deployment. Our CONUS Interceptor Site study determined the following sites are viable candidates and they are to be included in the Environmental Impact Statement: Fort Drum, New York; Naval Air Station Portsmouth SERE Training Area, Rangle, Maine; Ravenna Training and Logistics Site, Ohio; and Fort Custer Combined Training Center, Michigan. The Environmental Impact Statement, which will take approximately 24 months to complete, will assess environmental impacts at each of the sites, to include potential impacts to land use, water resources, air quality, transportation, socioeconomics and other factors established by the National Environmental Policy Act.

For fiscal year 2015 we are requesting approximately \$38.6 million for our network of strategic radars. We will continue missile defense upgrades of the Early Warning Radars in Clear, Alaska and Cape Cod, Massachusetts. We expect to complete the Clear radar upgrade in 2017 and the Cape Cod upgrade in 2018. Last year MDA worked with the Air Force to begin upgrading the Early Warning Radar (EWR) at Clear, Alaska to give it a missile defense capability, providing improved ballistic missile defense sensor coverage over the continental United States and reducing sustainment and operating costs. We also transferred sustainment responsibility for the Beale (California), Fylingdales (United Kingdom), and Thule (Greenland) Upgraded Early Warning Radars back to the United States Air Force.

REGIONAL DEFENSES

Deployment of regional defenses to protect our deployed forces, allies and international partners remains one of our top priorities. Our fiscal year 2015 budget request funds the continued development and deployment of defenses against SRBMs, MRBMs, and IRBMs in support of Combatant Commanders' near-term and future priorities. MDA will continue to focus on threats from the Asia-Pacific and Middle East regions as we continue to support the European Phased Adaptive Approach to protect our deployed forces and our allies.

Terminal High Altitude Area Defense

In fiscal year 2013 MDA delivered 37 THAAD Interceptors and expended two in flight tests, for a total of 84 delivered to Army war stock. We also delivered hardware for fielding of the third THAAD battery: 2 Tactical Station Groups, 6 Launchers, and a set of Peculiar Support Equipment. Training of the soldiers who will operate the third THAAD battery has begun and we expect it to be completed in fiscal year 2015. This year we expect to deliver the fourth THAAD battery. In collaboration with the Services, Joint Staff, STRATCOM and the COCOMs, we achieved first operational deployment of the THAAD capability for the defense of Guam. In recent tests we demonstrated THAAD's ability to intercept an MRBM as part of an integrated operational test with Aegis BMD (FTO-01), the second intercept of this class of target since FTO-01. THAAD has put together a remarkable record of success, successfully intercepting 11 out of 11 targets with the operationally configured interceptor.

For fiscal year 2015, MDA is requesting \$464 million for THAAD procurement, which includes the purchase of 31 THAAD interceptors. We also are requesting \$300 million in RDT&E funding in fiscal year 2015 and \$76 million for THAAD oper-

ations and maintenance. We will continue to enhance THAAD's ability to operate through post-intercept debris, enable launch of THAAD's interceptors using sensor data provided by other BMDS sensors, and maintain capability against current and evolving threats. THAAD will conduct two flight tests in fiscal year 2015. In FTT-18 THAAD will demonstrate an intercept of a separating IRBM target using the THAAD radar, launcher, fire control and communication, interceptor closed loop operations, and engagement functions. In FTO-02 THAAD will engage a SRBM with associated objects and demonstrate advanced radar algorithms.

Aegis Ballistic Missile Defense

Last year MDA completed six BMD Weapons System installations on Aegis ships: two Aegis BMD 3.6; three Aegis BMD 4.0; and one Aegis BMD 5.0 (USS *John Paul Jones*) in conjunction with the Navy's Aegis Baseline 9 installation. The USS *John Paul Jones* will replace the USS *Lake Erie* as the BMD deployable test ship to support MDA and Navy testing of Integrated Air and Missile Defense capabilities. We now have a total of 30 BMD capable Aegis ships in the Fleet. In 2013 we delivered 10 SM-3 Block IAs and 16 SM-3 Block IBs. By the end of 2015, over 65 SM-3 Block IBs will be delivered.

We are requesting \$929 million in RDT&E funding in fiscal year 2015 to continue development, testing, and installation of Aegis BMD capabilities to defeat longer range and more sophisticated ballistic missiles launched in larger raid sizes. We request \$435 million in fiscal year 2015 for Aegis BMD procurement, which includes \$348 million for 30 SM-3 Block IB guided missiles and \$12 million for operations and maintenance of SM-3 Block IAs. In response to the Combatant Commanders' demand for more BMD ships with the latest tested capability, Navy and MDA have incorporated Aegis BMD into the Navy's Aegis DDG Modernization Program and new construction DDGs. We will continue upgrading the capability of existing BMD ships and integrating new and modernized ships to the BMD fleet, with a planned operational availability of 43 Aegis BMD ships in fiscal year 2019. MDA coordinates BMD upgrades and installs with the Navy, and this plan will adjust if needed based on the Navy's new construction, Aegis modernization, and availability schedules. The homeport transfer of four Aegis BMD ships to Rota, Spain began this past February with the USS *Donald Cook*. Another Aegis BMD ship, USS *Ross* is scheduled to transfer later this year, and the remaining two Aegis BMD ships will transfer in 2015.

With the Japan Ministry of Defense, we completed multiple SM-3 Block IIA component Cooperative Development Project Critical Design Reviews, including: Staging Assembly, Steering Control Section, Guidance System, Third Stage Rocket Motor, Sensors, Kinetic Warhead Guidance Electronics Unit Assembly, Divert and Attitude Control System, and Kinetic Warhead, culminating with an overall missile system Critical Design Review, in October 2013. Also in October, the SM-3 Block IIA completed Propulsion Test Vehicle-01 in which the missile and new composite canister both demonstrated successful and safe ignition and egress from the vertical launching system.

Last year was a significant year for Aegis BMD testing, with five for five successful intercept tests and successful transmission of Long Range Surveillance and Track data through C2BMC to the GMD system in FTG-07. FTM-20 (February 2013) demonstrated the ability of the Aegis BMD 4.0 Weapon System to Launch on Remote using data from the Space Tracking and Surveillance System (STSS) demonstrator satellites. FTM-20 employed an SM-3 Block IA against a unitary medium-range target. High quality infrared fire control data from STSS was provided through C2BMC. C2BMC generated very high quality fire control quality data and passed the track data over operational communications links to the firing Aegis ship to conduct a launch on remote engagement. This complex test proved the value of an integrated C2 and sensor network and the use of space-based sensors to expand the BMD battle space. FTM-19 (May 2013) supported the development and assessment of the Aegis BMD 4.0 Weapon System and the SM-3 Block IB prior to an fiscal year 2014 full-rate production decision. A second Aegis BMD ship successfully acquired the target and conducted a simulated engagement using space-based sensor data.

In a span of 23 days, Aegis BMD was a principal player in three major operational flight tests: FTO-01, FTM-21 and FTM-22, which all achieved successful intercepts. FTM-21 (September 2013) and FTM-22 (October 2013) fired SM-3 Block IBs to validate operational effectiveness and suitability of the Aegis BMD 4.0 Weapon System and the SM-3 Block IB. FTM-22 was our fifth consecutive successful intercept mission using the 4.0 Weapons System and SM-3 Block IB and an important milestone for Phase 2 of the EPAA. FTM-21 and FTM-22 also completed Direc-

tor Operational Test and Evaluation Initial Operational Test and Evaluation flight testing requirements for the 4.0 Weapons System and the SM-3 Block IB.

To complete Initial Operational Test and Evaluation requirements for the 4.0 weapons system, we also conducted a tracking exercise, FTX-18, over the Atlantic Ocean in January 2014, which confirmed the capability of the 4.0 weapons system to track and engage a raid of three ballistic missile targets with simulated SM-3 Block IBs. In this event, multiple Aegis BMD baselines participated, yielding comparative raid performance data, including the Aegis Ashore Romania deckhouse at Lockheed Martin in Moorestown, New Jersey. The Aegis Ashore system will be deployed to Romania later this year.

We also continue development of a Sea Based Terminal capability to provide protection of maritime forces against advanced anti-ship ballistic missiles and increased layered defense for forces ashore. Using an incremental development approach, we are incorporating BMD capability into the Navy's Baseline 9 architecture, to include terminal defense with the SM-6 guided missile and the BMD 5.0 weapon system. In 2013, we completed the initial design phase and initiated software development for missile and weapon system modifications. We plan to test and certify the first increment of Sea Based Terminal capability in 2015. We also finalized the requirements for the second increment of Sea Based Terminal capability, scheduled to certify in 2018.

The fiscal year 2015 Aegis BMD flight test program will include almost all of the Standard Missile variants, with firings of SM-3 Block IBs from ships as well as the PMRF Aegis Ashore Missile Defense Test Center, execution of raid scenarios with engagements in both Anti-Air Warfare and BMD warfare areas, Launch on Remote for long-range engagements, developmental Controlled Test Vehicle firings of the SM-3 Block IIA missile, and tracking exercises for the Sea Based Terminal weapon system configuration.

European Phased Adaptive Approach

We will continue to support the EPAA to provide coverage of European NATO territory from Iranian ballistic missile threats by investing resources for EPAA development, testing and deployment. Phase 1, which provides coverage of NATO territory in Europe with the deployment of Aegis BMD 3.6 ships with SM-3 IAs and a SPY-1 radar in the Mediterranean, the AN/TPY-2 radar (Forward Based Mode) to U.S. European Command (EUCOM) in Turkey, and the C2BMC Spiral 6.4 system at Ramstein AFB in Germany, has been operational since the end of 2011.

Our goal in EPAA Phase 2 is to provide robust capability against SRBMs and MRBMs. The architecture includes the deployment of the Aegis BMD 4.0 and 5.0 weapon systems with SM-3 Block IBs at an Aegis Ashore site in Romania and at sea. A formal ground-breaking ceremony for the Aegis Ashore site took place in Deveselu, Romania in October 2013. The start of construction of the Aegis Ashore site in Deveselu, Romania this year involves the delivery of the deckhouse from Moorestown, New Jersey to Romania. The site will be integrated into the EUCOM command and control network, tested and operational by December 2015. MDA requests \$123 million in fiscal year 2015 to continue development of the Aegis Ashore sites in Romania and Poland. We also request \$226 million in fiscal year 2015 for the continued procurement of equipment for Aegis Ashore in Poland.

Four months after disassembly and transport of the Aegis Ashore equipment to the Pacific Missile Range Facility (PMRF) began, an Aegis Light Off ceremony was held on 6 December, 2013 to commemorate the first time the Aegis Combat System was powered on, with Sailors manning the consoles and the system brought on-line at the PMRF deck house facility. Last month we conducted the first test, a controlled test vehicle test, from Aegis Ashore test facility at PMRF, successfully firing the SM-3 IB against a simulated target. We plan to conduct additional flight tests at this facility in 2015.

Deployment of Phase 3 will enhance and expand protection for European NATO countries and U.S. forces through the region from MRBMs and IRBMs from the Middle East. In support of EPAA Phase 3, the SM-3 Block IIA, which we are co-developing with the Japanese government, and an upgraded version of the Aegis Weapons System are on schedule to be available for deployment in 2018 at Aegis Ashore sites in Romania and Poland, and at sea. MDA requests \$264 million in RDT&E funding in fiscal year 2015 to continue the bilateral, cooperative effort. The upgraded Aegis Weapons System and C2BMC system with engage on remote AN/TPY-2 radar (forward based mode) capability combined with the faster, longer reaching SM-3 IIA will expand Aegis BMD battle space to counter more sophisticated threats and will extend coverage to NATO allies in Europe threatened by longer range ballistic missiles.

Working closely with Navy, we will deliver the upgraded 5.1 Aegis BMD Weapons System as a part of the Navy's Baseline 9 architecture on ships for deployment worldwide in 2018 to support Combatant Commanders requirements to counter an expanded threat set. This past year we continued development of the Aegis BMD 5.1 fire control system.

Command, Control, Battle Management, and Communications and Sensors

In 2013 we continued to support warfighter operations of the EUCOM BMDS capability for regional defense. In partnership with the Combatant Commands, we maintain the capability to engage multiple simultaneous threat attacks in the region. As the foundation of BMDS, the MDA C2BMC team supported the warfighter in real world operations across multiple Areas of Responsibility, which included deployments to the Middle East, Turkey, and Kwajalein. Last year we fielded software upgrades to U.S. Northern Command (NORTHCOM), U.S. Strategic Command (STRATCOM), U.S. Pacific Command (PACOM) and Central Command (CENTCOM) and installed Spiral 6.4 MR-2 at PACOM, NORTHCOM, and STRATCOM. This year we completed software upgrades to CENTCOM and EUCOM. We also delivered the Distributed Training System to CENTCOM for Air and Missile Defense Exercise 13-2.

For the first time, in 2013, we conducted a flight test with successful debris mitigation (FTO-01) and also generated fire control quality track data from space sensors for a live fire Launch-on-Remote Aegis BMD 4.0 Weapons system and SM-3 Block IA engagement (FTM-20). In addition to continuing the enhancement of global BMD survivable communications and support for operations and sustainment of C2BMC at fielded sites, in fiscal year 2015 we will integrate Space Based Infrared System Increment 2 capabilities into C2BMC to support cueing of BMD sensors worldwide. We will also improve sensor data integration and battle management in C2BMC to support Aegis BMD cueing and launch-on and engage-on remote capability.

In support of homeland and regional defense, we continued to sustain AN/TPY-2 operations and supported the deployment of additional AN/TPY-2 radars and the C2BMC infrastructure. For the second AN/TPY-2 radar deployment to Japan, we identified candidate sites, conducted site surveys, selected sites, obtained agreements with the host nation, and initiated site design efforts. We deployed the AN/TPY-2 (Terminal Mode) as part of a THAAD battery in the PACOM Area of Responsibility. Last year we relocated the AN/TPY-2 radar in CENTCOM to a permanent location. Additionally, we accepted the AN/TPY-2 radar Number 8 and provided it to the 3rd THAAD Battery; awarded a production contract for AN/TPY-2 Number 12; awarded a production contract for an additional Prime Power Unit; and awarded a contract for AN/TPY-2 spares.

We request \$393 million in fiscal year 2015 to develop and deploy BMDS sensors (includes Long Range Discrimination Radar), and \$183 million to operate and sustain the nine AN/TPY-2 radars and support the UEWRs and Cobra Dane radar. We request \$444 million in fiscal year 2015 to operate and sustain C2BMC at fielded sites and continue C2BMC program spiral development of software and engineering to incorporate enhanced C2BMC capability into the battle management architecture and promote further interoperability among the BMDS elements, incorporate boost phase tracking, and improve system-level correlation and tracking. We will also continue communications support for the AN/TPY-2 radars and C2BMC upgrades. We request \$31 million for continued operation of the Space Tracking and Surveillance System and Near-Field InfraRed (NFIRE) satellite system in fiscal year 2015. We continue to operate the two STSS-D satellites to conduct cooperative tests with other BMDS elements and demonstrate the capability of the satellites to cue and track against targets of opportunity to provide high precision, real-time tracking of missiles and midcourse objects that enable closing the fire control loops with BMDS interceptors. We also continue to operate the NFIRE satellite, which has the capability to collect near-field phenomenology data for use in developing plume to hard-body handover algorithms for boost phase interceptor programs.

DEVELOPING NEW CAPABILITIES

We are developing fiscally sustainable advanced technology that can be integrated into the BMDS to adapt to threat changes. Our investments are focused on technology that brings upgradeable capability to the warfighter. Our advanced technology investments are determined by systems engineering, which permits us to evaluate and determine which emerging technical solutions will best address gaps in the BMDS and enhance its overall capability and performance. The goal of our technology investment strategy is to deploy a future BMDS architecture more capable of discriminating and killing reentry vehicles with a high degree of confidence,

allowing the warfighter to dramatically improve shot doctrine. One of our greatest challenges is the ability to bring multiple sensor phenomenology (i.e., reflective and thermal properties of the missile) into the missile defense architecture. Relying purely on terrestrial radar for precision tracking and discrimination of the threat is a potential weakness our enemy could exploit in the future. Adding persistent electro-optical sensors to our architecture is a high payoff solution for this gap.

MDA requests \$45 million in fiscal year 2015 for Discrimination Sensor Technology. We will integrate advanced sensors on existing unmanned aerial vehicles and demonstrate their ability to create a precision track that shooters can use to target their interceptors quickly and accurately. We will test the first precision track sensors at PMRF this fall. In parallel, we will begin integration and ground test of an advanced sensor upgrade to these precision track sensors with follow-on flight testing in fiscal year 2016. MDA's Discrimination Sensor Technology development and test plan is a cost-effective, stepping stone to MDA's long-term goal of persistent discrimination coverage from a space platform.

Additionally, Air Force Space Command (AFSPC) and MDA are collaborating on future space sensor architecture studies and sensor performance assessments across a broad set of joint mission areas and on Analyses of Alternatives (AoA) studies with threat definition, technical evaluations, and cost analysis support. MDA is supporting AFSPC in its review of concepts that will inform an AoA for the future of protected military satellite communications and overhead persistent infrared systems. As an example, MDA is exploring the potential of BMDS-focused space sensors that also provide data contributing to Air Force missions such as Space Situational Awareness.

MDA requests \$14 million in Weapons Technology in fiscal year 2015 to combine the knowledge gained from our Discrimination Sensor Technology effort with our high-power directed energy program to build the foundation for the next-generation laser system capable of addressing advanced threats and raids at a much lower cost than existing missile interceptors. We are pursuing a unique set of laser technology to execute missile defense missions from high-altitude, low-mach airborne platforms operating in the clear, low turbulence stratosphere. We have been developing two promising solid-state lasers: one at Lawrence Livermore National Laboratory and the other at the Massachusetts Institute of Technology's Lincoln Laboratory collaboratively with the Defense Advanced Research Projects Agency (DARPA). Both lasers achieved record power levels within the last year. MDA will continue high energy efficient laser technology development with the goal of scaling to power levels required for a broad spectrum of speed of light missile defense missions. This year, we are working with several aircraft prime contractors defining concepts for integrating a multi-kW class laser into a mid-altitude, unmanned aerial vehicle. A laser test platform addresses a broad spectrum of mission applications and we will continue our collaboration with our service partners, the Air Force Research Laboratory, and DARPA for joint development and test opportunities.

MDA requests \$26 million in fiscal year 2015 for the Common Kill Vehicle (CKV) Technology effort. MDA's strategy is to achieve as much commonality among future GMD kill vehicles and other future kill vehicles for Aegis BMD and THAAD. In fiscal year 2014 this CKV technology effort will help establish the requirements foundation for the redesigned GMD EKV, which we are now planning as the first phase (Phase I) of our overall kill vehicle development strategy. Our fiscal year 2014 joint government and industry concept definition effort will also assess the ability of industry to meet those requirements. In follow-on CKV efforts, or Phase II, we will make investments that reduce the costs of production and weapon system operations through new kill vehicle architectures and scalable technology that improves the effectiveness and performance of our interceptor fleet against an evolving threat. Our investments in large format focal plane arrays, smaller inertial measurement units and high performance propulsion components as well as new kill vehicle architectures are key enablers. This technology development allows us to engage a more numerous and increasingly more complex threat, eventually establishing the technology foundation for killing multiple lethal objects from a single SM-3 or GBI.

MDA requests \$16 million in fiscal year 2015 for the Advanced Research area which conducts leading-edge research and development with small businesses, universities, and international partners to create and advance future missile defense capability. This effort includes managing the Small Business Innovation Research and Technology Applications programs to help MDA-funded small businesses to transition their technology to missile defense applications. MDA is also seeking to leverage the creativity of our Nation's universities by sponsoring academic research focused on developing breakthrough capabilities for missile defense.

MDA requests \$9 million in fiscal year 2015 for the Advanced Concepts & Performance Assessment effort, which delivers independent assessments of government,

university, and industry technology concepts that, along with systems engineering requirements, support acquisition strategy decisions and define our technology focus areas. This effort has greatly improved our assessment of advanced BMD technologies to address evolving threats for the warfighter. We work directly with universities, federally funded research and development centers, university affiliated research centers and innovative small businesses to develop cutting edge data collection, modeling techniques, hardware-in-the-loop, and high performance computing platforms to speed the assessment of innovative technology concepts.

INTERNATIONAL COOPERATION

MDA is engaged with over twenty countries and international organizations, such as NATO. Our major international efforts reflect the Department's goals in the Asia-Pacific, Middle East, and Europe: building partner BMD capacity, supporting the strategic shift to Asia-Pacific, and executing EPAA deployments.

Building Partner BMD Capability

Since I last testified before the committee, we had several successes in our cooperative development programs with our Israeli partners. Through our cooperative efforts, Israel is developing a layered and robust BMD capability. In November 2013 the Israel Missile Defense Organization (IMDO) and MDA achieved a second successful intercept using the David's Sling Weapon System. This past January we successfully conducted the second fly-out of the Arrow-3 upper tier interceptor. These programmatic milestones provide confidence in future Israeli capabilities to defeat the evolving ballistic missile threat in the Middle East. Another recent and significant accomplishment for the Department is the precedent-setting international agreement with Israel regarding coproduction of the Iron Dome missile defense system that was signed on March 5, 2014. The agreement supports increasing U.S. industry co-production of Iron Dome components.

Our largest co-development effort is with Japan on the SM-3 Block IIA interceptor. Japan has committed significant funding for their part of this co-development project. Japanese and U.S. components will be fully integrated and flight tested in the coming years. The Japanese dedication to this program ensures we will remain on track to deliver SM-3 Block IIA in support of the EPAA Phase 3 in the 2018 timeframe.

After spending a year establishing processes, procedures, and an information technology infrastructure, the Defense Security Cooperation Agency designated MDA a Foreign Military Sales (FMS) Implementing Agency in February 2012 for the THAAD missile defense system and the AN/TPY-2 radar. MDA is currently executing one FMS case with the United Arab Emirates for two THAAD batteries and accompanying launchers, radars, and interceptors. We are actively engaged with several nations, particularly those in the Gulf region, to provide program information and pricing and cost data that may inform future decisions to procure THAAD as an upper tier missile defense capability.

Supporting the Strategic Shift to the Asia-Pacific

As I have already stated, along with the cooperative efforts on the SM-3 Block IIA, the United States and Japan are working together to support the deployment of the second U.S. forward-based AN/TPY-2 radar. Our Japanese partners should be commended for their efforts in supporting this deployment to the Japan Air Self-Defense Force (JASDF) base in Kyogamisaki in southern Japan. This radar will enhance both regional BMD capability and improve defense of the U.S. homeland.

MDA also supported the deployment of a THAAD missile defense system to Guam for the defense of U.S. deployed forces in the region. This is our first long-term deployment of a THAAD battery.

Executing EPAA Deployments

Last October MDA and other Department leaders participated in a groundbreaking ceremony for the Aegis Ashore site in Romania. Site preparation work has started, and we are on schedule with military construction activities demonstrating real steps to deliver EPAA Phase 2 in the 2015 timeframe.

In addition to programmatic planning and deployment activities, MDA is also supporting EUCOM efforts to ensure the necessary Implementing Arrangements are in place to support EPAA fielding timelines. In the near-term, this means coordinating on and, where possible, streamlining the construction, site activation, and equipment acceptance processes in Romania. We are also laying the groundwork for these efforts in Poland. Again, all activities are on track to support the stated EPAA timelines.

We are also working through NATO to ensure U.S. C2BMC and NATO command and control networks are fully interoperable. The United States and NATO test existing and future ballistic missile defense capabilities through a series of ongoing test campaigns in order to evaluate current capabilities and reduce risk for future development.

MDA will continue to engage NATO and regional Allies in support of U.S. national security strategy through international cooperation in missile defense. For instance, the United States is working with NATO on a study to identify cooperative opportunities for European nations to develop and procure missile defense capabilities to complement the U.S. EPAA contribution to NATO BMD.

MDA remains engaged and committed to expanding work with our international partners, to include conducting joint analyses to support partner missile defense acquisition requirements, cooperative research and development projects, co-development, deployments, FMS, and co-production. It is an honor to work with dedicated international partners on activities that benefit both U.S. and international contributions to missile defense architectures.

CYBERSECURITY

MDA has been working diligently to enhance the cybersecurity posture of missile defense networks and improve the protection of ballistic missile defense information. MDA has developed new policies, partnered extensively with industry and other Department of Defense organizations, and has continuously increased investments in cybersecurity to ensure our networks and information remain secure against cyber attacks.

I have coordinated policy Memoranda with the DOD Chief Information Officer's office and the Under Secretary of Defense for Acquisition, Technology, and Logistics and signed MDA Policy Memoranda on "Securing Ballistic Missile Defense Information on Government and Non-Government Networks and Systems." These require MDA program executives, program managers, contracting officials, and contractors to follow existing guidelines and implement new cybersecurity measures. We published MDA Manual titled: "Procedures for Protection of Critical Program Information and Mission-Critical Functions and Components within the Missile Defense Agency." We conducted a cybersecurity industry day titled: "The Emerging Role of Cybersecurity in Missile Defense Agency Acquisitions." This served to inform MDA industry partners of new cybersecurity requirements and threats and elicited feedback from industry representatives on how they can meet the new cybersecurity requirements. MDA also expanded a partnership with DOT&E to test and experiment with cybersecurity on MDA systems. This partnership leverages DOT&E resources and teams MDA with special cyber expertise and extensive knowledge of current threats.

The MDA Computer Emergency Response Team (CERT) performs continuous monitoring of MDA government information systems to protect and defend the confidentiality, integrity and availability of MDA networks and data. MDA is enhancing the established integrated security architecture, aligned to the Defense Enterprise Security Architecture that constantly improves methods to protect, monitor, analyze, detect, and respond to unauthorized activity within MDA information systems. Cyber boundary protection measures include state-of-the-art firewalls, intrusion detection and prevention systems, and email spam/virus prevention capabilities. The Missile Defense Agency will continue to work closely with Federal agencies, industry partners, and others to identify and implement measures to further increase the security of missile defense information while continuously seeking to improve technologies and capabilities that protect MDA critical program information.

I am proud to report we completed our first experiment with DOT&E in February. In the first experiment, MDA successfully demonstrated cybersecurity improvements that are in development. As a result of extensive interactions with a live cyber Operational Force during the first experiment, MDA will pursue new ways to strengthen cybersecurity that will be demonstrated in future experiments.

CONCLUSION

Mr. Chairman, we have stayed focused on our core mission. We will continue our work with the warfighter to develop, test, and field a networked, global BMD system that is flexible, survivable, and affordable and invest in promising and potentially game-changing technology programs to ensure the BMDS will be capable of defeating the complex threats we expect to face in the future. In order to ensure we are using the taxpayer's dollars wisely and deploying effective missile defense capabilities, we will continue to test elements of the system to demonstrate that they work before we commit to their fielding. It is vital that we provide the warfighters the

cost-effective and reliable weapon systems they need to do their job. I remain dedicated to committing the manpower and resources to correcting the issues in our GMD program, executing a successful intercept flight test this summer, and keeping the focus on reliability in our operational homeland defenses. We continue to make good progress in our work with our international partners, and I want to increase my focus on those important efforts.

I look forward to answering the committee's questions. Thank you.

BALLISTIC MISSILE DEFENSE TESTING

Senator DURBIN. Admiral, later this month, as you mentioned, you will attempt a GMD intercept flight test. Essentially, it's a do-over of the two flight test failures of the air 2010.

You stated repeatedly that a successful intercept is a prerequisite before purchasing any additional Ground-Based Interceptors. I'd like to ask you two questions.

The first question: You and I met yesterday and you noted that the whole world will be watching this test not just friends of the United States but even our enemies. First, how realistic will this test be? What kind of circumstances have been built into this to give an advantage to the interceptor? How will this stack up against a real attack on the United States; this particular test circumstance?

The second question: If, unfortunately, there is a bad test result, what then will you have to say about the future of this program?

Admiral SYRING. Sir, the answer to the first question in terms of operationally realistic scenario, it is very operational and realistic in terms of a threat that we may face from North Korea. Now, there are a range of limitations, obviously, in terms of our ability to test across the entire Pacific Ocean, but we are testing at thousands of kilometers at very high intercept velocities. Very, very similar to what we would experience with the threat ICBM (Intercontinental Ballistic Missile) from North Korea. I think Dr. Gilmore would validate that.

In addition, we do, as we have the last couple of tests, plan countermeasure which would be part of an expected scene from a threat from North Korea, as well. So we've seen good performance in terms of what the system saw in the last test with the same sort of countermeasure package and I'm confident that this test will demonstrate the same. So I would say it is very operationally realistic.

Now, as you and I have discussed, there are necessary scripted parts of the scenario that we must conduct for safety reasons and for range limitations that are part of not just this test but every test that I do with Aegis and that as well.

The second part of your question, Mr. Chairman, is on what happens if we fail. I believe it is, if I can paraphrase. And the response would be we would, like every test, we would find out, first, what failed. There's many parts of the system that could fail that are part of a successful intercept test. It's just not the GBI or the Kill Vehicle. So we would go through a very rigorous, very thorough failure review board process.

If it turned out to be something very simple in terms of maybe the wrong weapon task plan that was transmitted to the interceptor from the radar or some issue that we haven't seen before, we would quickly find out what happened, correct, and try to get

back to flight as soon as possible. If it was another Kill Vehicle problem, which would now make us 0 for 3 on this design, I think you would see us take a step back and assess taking delivery of the EKV's that we're planning to take delivery upon a successful flight test.

Senator DURBIN. Admiral, the GAO (Government Accountability Office) tells us that the cost of demonstrating and fixing the GBI is about \$1.3 billion. This includes flight test costs, failure review costs and retrofits. Have you been able to recoup any of these additional costs from the contractors as a consequence of performance? What actions are you planning on incorporating in future GBI procurement to protect the Government from having to cover unforeseen cost?

CONTRACTS

Admiral SYRING. Sir, the failure really goes across two contracts; an old contract and the new contract that was awarded. And there have been fee decrements in terms of award fee and incentive fee that the contractor has lost. Going forward, now entirely under the new contract, if there is a failure, say in the next test or the test after especially with the next version which is the CE-II block one, there are provisions in the contract for us to recoup paid fee; to go back retroactively and pull fee back. So I'm confident that has a good provision in it going forward.

Senator DURBIN. When you described the problems with the first two tests to me yesterday, they were a bit more technical than I'm familiar with in my capacity. But there appears to be a kind of breakdown in the actual mechanics. You talked about the vibration of a certain engine and the failure of another valve to close; if I remember correctly. Are those the types of things that, if they occur in the future, you would say to the contractor, "You bear the responsibility for not producing what you promised."

Admiral SYRING. Absolutely. Sir, yes, sir.

Senator DURBIN. And that would carry with it a financial burden on that contractor?

Admiral SYRING. Yes, sir.

Senator DURBIN. In the past, it's been difficult to distinguish the cost for acquiring the actual interceptor from other GMD program cost since interceptors were incrementally funded along with ongoing design and engineering. Can you tell us how much the 14 additional interceptors you're planning to procure in the future will cost?

Admiral SYRING. Sir, we, right now in the budget, we have roughly \$75 million per interceptor starting in fiscal year 2016 at a procurement rate of two per year.

Senator DURBIN. Can you assure the committee that before production of these missiles we'll have full cost data for each of these interceptors?

Admiral SYRING. Yes, sir.

AEGIS ASHORE

Senator DURBIN. Admiral, construction of the Aegis Ashore site in Romania concludes later this year and you're planning to follow that with construction of an Aegis Ashore site in Poland beginning

in fiscal year 2016. Can you give us your outlook on how this is progressing and do you have sufficient military construction and procurement funding in your budget to fully execute Aegis Ashore in Romania and Poland?

Admiral SYRING. The answer to the second part of the question is yes, sir, 100 percent funded, on track for completion. The Poland request is for next year. The big request for Poland and the MilCon and all of those pre-agreements and negotiations with host country are going very, very well. Romania is, as I said, is on track. I was there last week. We are actively managing that between myself and the Army corps of engineer head. I'm confident that that will deliver on its stated milestones.

Senator DURBIN. Admiral, the budget request includes \$175 million for the procurement of Iron Dome batteries and interceptors for Israel consistent with our Government's commitment to fund a \$680 million requirement for the state of Israel by fiscal year 2015. The program has been very successful against rockets launched from Gaza toward Israel and was developed in field in record time. Can you give us an update on the production timeline for additional batteries and interceptors? And what role is there for U.S. industry to contribute to this program?

ISRAELI CO-PRODUCTION

Admiral SYRING. Sir, I'm very pleased, and I know you know this, that we've signed a coproduction agreement with Israel back in March which would give 30 percent of the stated Iron Dome production in the first year to the United States and 55 percent in the second year. The request this year is for \$175 million. So there will be a significant amount of U.S. work share to help our Israeli partners produce and field the Iron Dome interceptors.

I would defer on the number of batteries and the number of interceptors to a classified forum as they protect that information. But, with the coproduction agreement and with the ongoing contract negotiations that are going on between the U.S. company and the Israeli company, we will work through those details together to come up with the right cost, model, and the right overall price to the Government of Israel.

Senator DURBIN. Thank you, Admiral.

Senator Shelby.

Senator SHELBY. Thank you.

Admiral, on April 30, General Odierno testified before this very committee affirming, again, the importance of funding U.S. Missile Defense capabilities. This notwithstanding sequestration. The General stated then, and I'll quote him: "Our missile defense program and our ability to protect ourselves, is becoming more and more important as the Army continues to have over 50 percent of its ballistic missile defense capability deployed around the world."

Admiral, Senator Durbin rightfully questioned you just a few minutes ago about the implications of failure. And you're going to have failure from time-to-time in testing as you develop this, and there's nothing better than success in our performance. Let's assume that you're going to have a successful—you don't know what you're going to test coming up, but what are the implications of that and is there a ring to that around the world?

Admiral SYRING. Yes, sir.

As you know, historically, sir, with the older Block of interceptors, we've been successful. We've tested three times successfully before the failure last July. The failure last July, I won't go into details in this forum, but it was very simple. And I'm confident that we've corrected that going back and that it's been accounted for going forward underscoring the need to test. And you know I testified last year saying that we can't go 3, 4, or 5 years between tests because the importance of what we learn is critical to the program and critical to the confidence of the warfighter. Upon success—if I can, sir?

Senator SHELBY. Go ahead.

Admiral SYRING. Upon success later this month, we would then take delivery on the next batch of interceptors that are ready to go. As you know, we've been on a delay and a lot of those have been put under contract but we, the Government, are not accepting them until the successful flight test. And upon that, we'll begin accepting those; we'll begin taking interceptors out of the ground to, now, put those improvements in the interceptors that are fielded; and then, the final step will be to complete what we call the CE-II Block 1 program, which is a rocket motor booster avionics upgrade that's absolutely necessary for OBSA lessons and that will comprise the next nine. So, by the end of 2017, we'll have a total of 47 which will be 44 in the ground plus 3 spares.

Senator SHELBY. Admiral, the threat that North Korea poses to the Asia Pacific region and to the world, I believe, is real. In March, North Korea, you know this well but I'm just doing this for the record, North Korea tested a midrange Rodong missile, which has a range of over 600 miles. In light of this and other developments, South Korea has discussed a possibility of deploying a THAAD battery.

What kind of threat in your judgment does North Korea pose in terms of mid and potential long range ballistic missile and what are the possibilities of deploying a THAAD battery to South Korea?

NORTH KOREA

Admiral SYRING. As I discussed with you, sir, the threat that North Korea poses to South Korea is very real. And they've demonstrated, through flight testing, a capability that threatens that country. And they paraded longer range missiles around—North Korea has paraded longer range missiles around their country on annual provocation cycles that are concerning, to say the least, to myself and—Admiral Locklear.

Senator SHELBY. Admiral, again, during your testimony before the Senate Armed Services committee in April of this year, you warned against the ballistic missile threat stating then, these are your words: "Our potential adversaries are acquiring a greater number of ballistic missiles. Increasing their range and making them more complex, viable, reliable and accurate."

MISSILE AND SPACE INTELLIGENCE CENTER

And we're all troubled by the proliferation here. I'm encouraged sometimes by the important work that the Missile and Space Intelligence Center does to combat this threat. Could you discuss here

in this hearing or would it take a classified hearing on MDA of the Missile and Space Intelligence Center's work and what opportunities do you see for greater cooperation in the future?

Admiral SYRING. Sir, they're a key component and a key partner in our development efforts. Everything that we develop and improve is based on their intelligence assessments. And we've also done a lot of work with them in other areas that are classified that I look to continue in the future.

Senator SHELBY. Admiral, the Missile Defense Agency and the Navy, together, successfully completed their first flight test of the Aegis Ashore system component less than a month ago, on May 21. During the flight test, the Aegis weapons system effectively targeted a simulated ballistic missile threat with a Standard Missile SM-3 Block 1B (SM-3 1B) guided missile. What do you see is the future role of the SM-3 Block 1B guided missile? Can you talk about that here?

Admiral SYRING. Yes, sir.

That will be the—the SM-3 1B will be the workhorse for the Aegis BMD fleet going forward. We'll go through the FYDP (Fiscal Years Defense Plan) to procure over 300, close to 400, of these missiles before fiscal year 2019. They'll be loaded out on the, today, 30 BMD capable ships going to 43 by the end of the FYDP. SM-3 1B will be the cornerstone and the interceptor that we field in Romania in 2015. It is the workhorse for the fleet around the world.

IRON DOME

Senator SHELBY. Just for the record, Senator Durbin asked you some questions about the cost and production, everything, about the Iron Dome. Just for the record, tell us about the Iron Dome and we know—a lot of us know about it. You know more than anybody. How important is that in the future and should we spend that money?

Admiral SYRING. The—

Senator SHELBY. In your judgment.

Admiral SYRING. Yes, sir.

I've been to Israel. I've seen the real threat that they face. I've stood on the Hill. I've talked to the folks. I've talked to kids in Israel who are concerned every day of the threat they face; the schools and the shelters that they must run to upon attack is nothing that we face in this country.

The Iron Dome system is incredibly effective. I won't say, you know, there's different views on the, you know, the percentage of intercepts. But that's based on what they actually try to intercept versus what is not a threat to the population. And when it needs to intercept, it does. And it's proven very, very effective.

In terms of application for our use, I would defer that question, sir, more to the Army and their development of a requirement for it. They certainly are deploying and are all in on PATRIOT and the PATRIOT upgrade and then the future of that, as well.

Senator SHELBY. Admiral, in your judgment, do you believe that the Defense capability against missiles, defensive posture, has grown in recent years faster than the offensive missile capability, or is it a standoff?

Admiral SYRING. I would answer that in two ways, sir.

Senator SHELBY. Okay.

BALLISTIC MISSILE DEFENSE THREAT

Admiral SYRING. We certainly are ahead of where the longer range threat maturity is in terms of the field that GBI interceptors. And we've worked to stay ahead of the threat with Aegis and THAAD to make sure that not just in numbers but in capability they're able to counter the ever increasing complexity of the threat.

We'll never be able to field a system that's going to intercept hundreds or thousands of ballistic missiles. Our purpose is to provide a first line of defense around the world and that's what we're designed to do.

Senator SHELBY. Mr. Chairman, would it be possible to consider a closed hearing with the Admiral because a lot of things we can't get into it in open session here but I think it's important—

Senator DURBIN. Of course. Let's talk about it at a mutually convenient time for that.

Senator SHELBY. Okay. Thank you.

Senator DURBIN. Thank you.

Senator REED.

Senator REED. Thank you, Mr. Chairman.

Thank you, Admiral, for your service and your leadership.

STANDARD MISSILE-3

Senator Shelby made the point about the SM-3 and it's vital but, as we're looking at comparing numbers, it looks like this budget submission there's a reduction in the number of SM-3s you're buying. Is that a budget pressure, or a more efficient deployment, or what's the story?

Admiral SYRING. Sir, two issues that force the reduction in quantity. One, we were behind in terms of finishing the required testing for operational fielding which we were very successful with last year. There was an issue with one of the interceptors that we had to flush out and then a retest. So we were late in terms of the original plan.

So in terms of putting missiles under contract, in August of last year we put 33 under contract and then I'm getting ready to award, this month, another 52. And then, you know, as you stated, 30 in next year. So really, in a period of about 18 months we'll have awarded 115 missiles. That's a lot of work. And then I think you'll see us get back to 52 in the request next year, hopefully, under a multiyear authority. So I think we got it right.

Senator REED. Good, good.

Let me ask a question with respect to Ground Missile Defense. In order to provide guidance and telemetry to the launch vehicle and the Kill Vehicle wraps, you need external sources; radars and other satellite, et cetera. How vulnerable, and you might want to take this for close session, are those external sources to cyber-attack so that someone contemplating a launch would first conduct a cyber-interruption of your guidance systems?

Admiral SYRING. Sir, we've looked at that and I'd like to take that to a classified session.

Senator REED. But it's a serious concern?

Admiral SYRING. Yes, sir.

AEGIS MODERNIZATION

Senator REED. With respect to the Aegis program, it is one of the most adaptable and critical to the defense not just of the United States but our allies. The total number of ships that you would like to see by fiscal year 2019 is 43 but the Navy, in their budget this year, are restricting the operating status was at least four of those Aegis ships. Are you anticipating a problem with availability of Aegis platforms in going forward?

Admiral SYRING. Sir, it's a good question.

As you know, we're tied to the Navy and their modernization plans but we're also working with the Navy in terms of the, and not to get too technical here, but the 4.1 is the computer program. And that gives, you know, current Aegis ships like the Flight I's and II's significant BMD capability without going through a full modernization.

So we're in support, we're driven in some cases by the numbers, but I'm confident that the 43 is good through 2019. I was just with the Navy last week.

Senator REED. But, of those, at least four of those ships will be, sort of, limited duty; if that's the right term. Even with that status, you're confident that you can call upon them when necessary?

Admiral SYRING. Yes, sir.

Senator REED. One of the issues here is that, and it's becoming increasingly important, is our cooperation with allies. And, you know, in the Pacific, the Japanese, they are very serious about co-operating, et cetera. Can you talk about the plans you have with respect to ballistic missile defense not only operationally but also in terms of research, development, coproduction, and that, you know, tough budget we could ask—we could get assistance?

Admiral SYRING. Yes, sir.

STANDARD MISSILE—3 2A

The Japanese, our partners from Japan, have been very helpful and are equal partners on the SM-3 2A development and have stepped up to the plate in a big way in terms of carrying a lot of that load. And they're not only just great financial partners, they're great technical partners. I'm confident that missile is in a good place because of their partnership; one example.

Senator REED. Let me go back to the Ground Missile Defense program, and this is a question that's not rhetorical. Correct me if I'm wrong but the test vehicle, is it launched from one of the silo missiles that you have, the 44 missiles?

Admiral SYRING. It's launched from a test silo at Vandenberg.

Senator REED. At Vandenberg.

So the actual force that's in the field now, we don't launch from those physical facilities?

Admiral SYRING. There's a silo at Vandenberg that's dedicated to test.

Senator REED. And do you have to compensate in terms of, you know, are we at the phase—I guess the question would be we've got 44 missiles in the ground, we never shot any of those—

Admiral SYRING. We'll have 44 in the ground by 2017.

Senator REED. 2017.

Admiral SYRING. Thirty, today.
 Senator REED. Yes.

BALLISTIC MISSILE DEFENSE TESTING

Admiral SYRING. And, yes, we're limited to testing out of Vandenberg. We would never, and can't, test out of Fort Greely.

Senator REED. But there's got to be, at least, a small translation problem between a test range at Vandenberg and the actual—you're planning for that? Are you compensating for that? Are you—

Admiral SYRING. Yes, sir.

What happens is, and I've described the limitations of the range, and it is shorter range, although it's still thousands of kilometers. We take the results of that test and we feed it back into our models and extrapolate for the entire range of intercept.

Senator REED. All right.

Admiral SYRING. Which gives us confidence.

Senator REED. You've made the point that, you know, even the most sophisticated defense system can't stop a barrage of hundreds of thousands of missiles but when will we get to the point where we're engaging multiple missiles coming at us? How many years away?

THREAT

Admiral SYRING. I'll answer that in a classified session. I could talk about numbers and current shot doctrine but the request that we have in front of you is to greatly improve where we are today in terms of the number of interceptors that we fly at each threat.

And the way we do that is, one, reliable EKV and interceptors, and two, the ability to discriminate at a very complex decoy scene which we see as the future. So you need to have high confidence in the reliability of the interceptor and be able to inform the interceptor what the correct target is in the debriefing. And both of those are critical too to countering more threats to the future.

Senator REED. And just to the question Senator Shelby alluded to, and I'll conclude because we'll do it in close session, is that there's a trajectory for offensive capabilities and there's a trajectory for defense capabilities. And one question is are we ahead or where do the lines cross? And that would be a valuable but I suspect you want to say that in close session.

Admiral SYRING. Yes, sir. I would. And I would like to do it with Admiral Winnefeld, as well, who thinks a lot about this.

Senator REED. Thank you, sir. Thank you, sir.

Senator DURBIN. Senator Murkowski.

Senator MURKOWSKI. Thank you, Mr. Chairman.

Admiral, welcome and thank you for your leadership.

I want to follow on the questions that my colleague and friend from Rhode Island has been asking about this next scheduled test for the GMD test scheduled for the 22nd of this month. We have historically launched our target missiles from the Kodiak launch complex. In fact, there were eight launches between 2004 and 2010 and I'm told that the last successful intercept that we had of the GMD system was when we used the complex there at Kodiak.

So the question for you this morning is given that this next test coming up in the end of June is going to be launched out of Kwajalein, the last 4 years, the tests have all come out of Kwajalein, what do you see as the future of the Kodiak complex? Are there plans to return to the complex for any launches? I would think and I guess, just looking at the map, I would think there would be cost savings, actually, that come from the Kodiak complex given that you're 2,000 miles past Hawaii there. Can you just speak to the Kodiak complex and where it fits in to the testing?

Admiral SYRING. Yes, ma'am.

The Kodiak complex was very useful to us in the past. And I agree with your assessment. And it gets really back to the Chairman's question in terms of operationally realistic scenarios. In terms of a threat from North Korea coming to the United States is, in layman's terms, is head on. And that sort of geometry is very, very important to us. But geometry, perpendicular, if you will, to the threat access was useful early on. But the way we are progressing our tests is to be, again, more operationally realistic and move consistently up to higher intercept velocities and longer ranges; are the two areas we're concerned with.

I'll be happy to come over and share with you our assessment at a classified session in terms of the plan testing and the limitations that Kodiak has with those tests.

Senator MURKOWSKI. Well, I would appreciate that level of discussion. Again, I think we recognize that we have had some good results out of Kodiak. There is clearly value. So it would be helpful for me to understand your perspective here.

What is the annual testing requirement for the existing intercepts? And how do we maintain that the confidence in the reliability for these systems while we're working towards the redesign of the EKV's? How do you do this simultaneously?

BALLISTIC MISSILE DEFENSE TESTING

Admiral SYRING. The first part of your question: The annual test cost for a GMD intercept is about \$200 million. That includes the cost of the interceptor, the cost of the target, and all of the support that goes into it. It's a huge national, sort of, level test.

The point on how do you ensure reliability in terms of everything that's going on with the redesign and everything that is happening in the current program or record actually is confidence in reliability and component testing and modeling of the components to ensure that we understand where the weak links are in the design, and work to improve those, is one way. And, as we return to 44, you'll see, I think, a renewed emphasis and focus in the program on that very issue.

Senator MURKOWSKI. The recommendation for the GMD testing here, coming out of the various committees here in the Senate, have recommended additional funding for maintenance and reliability upgrades that are not included in your fiscal year 2015 budget request. It appears, looking at what the various committees have advanced, that the amount needed to address the maintenance and the reliability concerns is in the range of \$30 million to \$50 million. Based on your assessment of what needs to happen with the maintenance and the reliability requirements, how much

additional funding do you actually think you need in the fiscal year 2015 to make sure that we are to that point; that we can ascertain that we have what we need for the maintenance and the reliability?

Admiral SYRING. I would answer it in two ways, ma'am.

Inwardly, within the agency, there's amounts that can be made available through below-threshold reprogramming in fiscal year 2014 and we're certainly actively pursuing that within my authority. The other part would be to work through the Department on a request above the budget request and to gain acceptance and really concurrence on the needed and necessary improvements in the program. And I'm working that today with the Department.

Senator MURKOWSKI. Okay.

Well, Mr. Chairman, I requested an additional \$250 million in the appropriations request that I had advanced for additional GMD upgrades. You know, certainly that's higher than we're talking about here. And I recognize, given the budget environment, certainly willing to work to scale that back but I do think that it is necessary to work to maintain the reliability of this system. So, as we look to determine what that right number is, I would hope that we would have good discussion on that.

And then, last, Admiral, I want to ask you about the Long Range Discrimination Radar. We follow pretty closely, in Alaska, what is going on with missile defense and take the role that we have as a state, where we are host to the GMD system there at Greely, very seriously. I have been encouraged by what we're seeing coming out of the development of the Long Range Discrimination Radar (LRDR) and the fielding schedule that we're looking at and having it operational within Alaska, within this next decade.

I was somewhat troubled to see that on the House side they have struck out your fiscal year 2015 request for the LRDR planning. So I would like for you to describe not only what the capabilities that LRDR brings to the missile defense system but also to the basing aspect of it. I think, or at least I've been told pretty consistently, that this will be based in Alaska. There's some discussion as to where it might be and how the siting will impact the effectiveness of that. So if you can speak to the LRDR system?

Admiral SYRING. Yes, ma'am, and I'll keep it short.

LONG RANGE DISCRIMINATION RADAR

But there are eight active trade studies that we're conducting within MDA and with the warfighter to answer those exact question in terms of where is the best placement of the radar; what is the right frequency of the radar; what is the right power of the radar to meet what we project to be the threat in 2020.

The importance of the radar is that it provides us that needed discrimination capability against the threat from North Korea. As they continue to progress and add decoys and countermeasures, and I'll stop there in terms of classification, we must have a discrimination capability of a radar to counter that to keep our shot doctrine manageable and to defeat raid sizes of more than one. And I view it in conjunction with the EKV redesign that I've asked for in this budget, as well. That's the two most critical components, the

GMD program, going forward in addition to the needed reliability improvements; absolutely vital.

Senator MURKOWSKI. You mentioned that you are doing the assessment, the analysis, there for this siting. Do you have any idea as to when those decisions might be made and, more importantly, made public?

Admiral SYRING. Yes, ma'am.

Over the course of the summer, I'm on a very aggressive timeline to award this radar in fiscal year 2015 to meet the fiscal year 2020 capability, which I view as critical. I would take it for the record, but it'll be over the next several months, ma'am, and we'll be sure to come over and see you.

[The information follows:]

The Missile Defense Agency is working with the Warfighters to finalize the Long Range Discrimination Radar site selection. The selection will be made public when the final request for proposal is released this fall.

Senator MURKOWSKI. Okay.

Thank you, Mr. Chairman.

ADDITIONAL COMMITTEE QUESTIONS

Senator DURBIN. Thank you very much, Senator Murkowski.

Admiral, thank you for your testimony today. We're looking forward to the results of your test in just a few weeks.

[The following questions were not asked at the hearing, but were submitted to the Department for response subsequent to the hearing:]

QUESTIONS SUBMITTED BY SENATOR DANIEL COATS

Question. The Canadian Senate is currently reviewing Canada's missile defense policy and its lack of interest to participate in U.S. homeland missile defense. While we understand that the decision is ultimately Canada's, could you please explain potential benefits of Canadian participation in U.S. missile defense efforts?

Answer. Until formal government-to-government discussions on ballistic missile defense (BMD) participation between the U.S. and Canada occur, and the Canadian Government makes a policy decision on its intent to participate in BMD activities and the extent of that participation, it is premature to discuss any capabilities or potential benefits of Canadian participation in U.S. BMD efforts.

Question. Could you please describe the benefits that an East Coast missile defense system would give you, both in terms of tracking and capabilities, should a land based Aegis site be deployed?

Answer. [Deleted].

Question. Given Russia's recent aggressive actions in Ukraine, could the U.S. speed up the construction of land-based missile defense sites in Poland and Romania? What additional resources would be required to do so?

Answer. The Missile Defense Agency (MDA) is on schedule to deliver Aegis Ashore (AA) to Romania in 2015 and Poland in 2018 to support European Phased Adaptive Approach Phases II and III. It would be costly if the Department of Defense (DOD) decides to accelerate deployment of these systems. Acceleration would not include the more capable Standard Missile (SM)-3 Block IIA guided missile, and there are other associated risks.

With regard to Romania, construction began at the AA Romania site in October 2013. No opportunities exist to accelerate the schedule on the ongoing military construction (MILCON) project due to procurement schedules of long-lead items.

By increasing shift work, we could accelerate Aegis Ballistic Missile Defense (BMD) weapon system (AWS) installation, integration, and testing by approximately 2 months with additional research, development, test and evaluation (RDT&E) funding. Any acceleration to the Navy's integration, testing and manning schedule and plans must be determined by the Office of the Chief of Naval Operations.

With regard to Poland, there are two options to accelerate deployment of AA Poland:

Option 1. Acceleration of AA Poland by 9 Months

Shorten MILCON contract acquisition time by awarding a negotiated sole source contract:

- May result in a higher negotiated cost requiring more MILCON funding.
- Coordination with United States (U.S.) Army Corps of Engineers (USACE) as the DOD construction agent is required to revise acquisition strategy and obtain sole source approval.
- Current AA host nation-Poland (HN-PL) AWS equipment contract delivery date supports this option.

Option 2. Acceleration of AA Poland by 18 Months

Requires MILCON authority and funding availability in the fiscal year 2015 budget:

- May result in a higher negotiated bid requiring more MILCON funding.
- Contracting acceleration; issue a sole source design-build contract.
- Requires coordination with USACE as the DOD construction agent to revise acquisition strategy and obtain sole source approval.

Requires more RDT&E funds due to an accelerated schedule requiring complex premium shift work and additional equipment. Includes specialized material handling equipment during site activation, installation and checkout, and transition and transfer leading to initial operational capability.

Requires AWS equipment swap with Navy, coordinated with Navy Program Executive Officer, Integrated Weapon System (PEO IWS), and must be authorized by Congress:

- Maintains current AA HN-PL AWS equipment contract delivery date.
- AWS ship set accelerated delivery does not require modification of funding.
- Margin exists in AWS delivery where both options support operational capability.

The accelerated AA system will be able to launch SM-3 Blocks IA and IB guided missiles. The Aegis BMD 5.1 weapon system (required to launch the IIA missile) and SM-3 Block IIA missile will not be available earlier than 2018. However, compliance with section 223 of the National Defense Authorization Act for fiscal year 2011 (Public Law 111-383) requires us to not procure other than long-lead, or deploy operational missiles on European land until operationally realistic testing of the interceptor and system are certified to Congress.

The MDA can only address costs and programmatic impacts of MDA responsible efforts. A more complete response requires coordination with the Navy and other organizations to more fully reflect Department costs, operational impacts, and national security policy implications.

Note: The MDA delivers all SM-3 missiles to U.S. Fleet Forces Command (USFF) for allocation to combatant commanders. USFF determines the mix of variants deployed to ships and ashore based on ballistic missile defense requirements through the Global Force Management process. Deploying SM-3 interceptors to Poland before delivery of the SM-3 Block IIA in 2018 would reduce the availability of SM-3 Block IB guided missiles.

Question. In what timeframe should we expect North Korea to develop multiple warhead technology? If this is a conceivable threat, what response is proposed by the U.S. Missile Defense Agency?

Answer. [Delete].

Question. The latest congressionally mandated Department of Defense report on China's military modernization for the first time mentions that China is developing a new ICBM called the DF-41 that may have multiple warheads. What is your estimate for how many Brigades of the DF-41 that China may eventually deploy and what new threat does this missile pose to the security of the United States?

Answer. This question requires an intelligence assessment to answer. The Missile Defense Agency respectfully defers to the DOD intelligence community.

Question. Both Russia and China are now in the process of developing and soon, perhaps deploying new multiple warhead-armed ICBMs. Is it time for the Missile Defense Agency to revisit the development of a missile defense interceptor that can defend against multiple incoming warheads?

Answer. As specified in both the Ballistic Missile Defense Review signed by the Secretary of Defense in 2010 as well as the Presidential Policy Directive on U.S. Ballistic Missile Defense signed by the President in 2011, it is the policy of the United States that the U.S. Ballistic Missile Defense System is not intended to threaten the strategic balance with either the Russian Federation or the People's Republic of China. As currently designed and deployed, the Ground-based Midcourse Defense system is directed toward the projected limited long-range ballistic missile threats emanating from North Korea and Iran. The Missile Defense Agency is con-

tinually assessing improvements in our missile defense capabilities to address the evolving threat.

Question. According to reports citing U.S. Defense Department sources, China earlier this year tested a Hypersonic Glide Vehicle (HGV) warhead. What new threat would a HGV pose to U.S. forces and does the Missile Defense Agency have the means to protect U.S. forces from HGVs? What new capabilities would be required to defend against HGVs?

Answer. [Delete].

Question. China is developing and may soon deploy a new class of Intermediate Range Ballistic Missiles (IRBMs), with one identified as the “DF-26.” Does the Missile Defense Agency have the means to defend U.S. forces from IRBMs?

Answer. [Delete].

Question. China is estimated to have amassed up to 1,400 ballistic and cruise missiles against the Taiwan. Given the volume of this threat, is it advisable for allies and friends facing this level of threat to seek a more economical form of missile defense, such as the Rail Gun? When could Rail Gun technology be developed in order to offer allies and friends a defense against massive missile threats? Does the Missile Defense Agency support any ongoing Rail Gun related programs that could defend against massive short range ballistic missile threats?

Answer. As specified in both the Ballistic Missile Defense Review signed by the Secretary of Defense in 2010 and the Presidential Policy Directive on U.S. Ballistic Missile Defense signed by the President in 2011, it is the policy of the United States that the U.S. Ballistic Missile Defense System is not intended to threaten the strategic balance with either the Russian Federation or the People’s Republic of China. The Missile Defense Agency (MDA) is working closely with the Office of the Secretary of Defense Strategic Capabilities Office (SCO) and the Office of Naval Research to assess the feasibility of the rail gun for ballistic missile defense.

Regarding the question, “When could Rail Gun technology be developed in order to offer allies and friends a defense against massive missile threats?” this question is better addressed by the Office of Naval Research, since this a Navy program.

The MDA does support ongoing rail gun related programs that could defend against massive short-range ballistic missile threats. We have been working closely with the SCO and the Office of Naval Research, and are supporting electromagnetic rail gun (EMRG) as follows:

- Identifying and assessing fire control sensor options and continuing to participate in sensor trade studies.
- Helping to assess propagation effects, accuracy and guidance law analysis.
- Assisting with Ballistic Missile Defense (BMD) target identification and integrated testing expertise.
- Providing systems engineering expertise, threat and scenario identification, and cost estimating support to evaluate the utility of this weapon for BMD.
- Assessing Ballistic Missile Defense System (BMDS) and Integrated Air and Missile Defense (IAMD) integration requirements.
- Assessing potential role for EMRG in BMDS and IAMD architectures.

A significant systems engineering effort would be the next step in assessing the value of this technology for defense against ballistic missile threats.

SUBCOMMITTEE RECESS

Senator DURBIN. I will tell the members of the subcommittee that we’re going to reconvene on Wednesday, June 18, at 10 a.m. to receive testimony from the Secretary of Defense and the Chairman of the Joint Chiefs of Staff.

At this time, the subcommittee is going to stand in recess.

Thanks, Admiral.

[Whereupon, at 10:56 a.m., Wednesday, June 11, the subcommittee was recessed, to reconvene at 10 a.m., Wednesday, June 18, 2014.]